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The Right Hand Giveth, and the Left Hand Taketh Away

You may have heard recently that the state of California is considering banning the use of incandescent lighting in favor of compact fluorescent lights (CFLs). And in Australia, legislation is being considered that would make most incandescent lighting illegal by 2009–2010. CFLs use only about one-fourth the energy of conventional incandescent bulbs and produce more light with less heat, yet can last 10 to 15 times longer. Switching to another form of lighting will obviously save an enormous amount of energy and could substantially reduce toxic emissions. You'd think everyone would favor these steps; they certainly seem to make sense. Before we take these steps, we need to take a few others to make sure we don't throw the baby out with the bathwater.

One concern involving fluorescent lighting that seems to have been overlooked is the issue of mercury. Fluorescent lights are filled with argon gas and mercury vapor. It's the photons given off when the mercury vapor is energized that produces the light. The average fluorescent light contains 20 mg of mercury. (Some of the newer CFLs contain only about 4 mg of mercury, an amount that would just cover the tip of a ball-point pen.) This may not sound like much mercury, but consider the fact that it takes only a single gram to contaminate a 2-acre pond of water. Currently, about 800 million fluorescent lamps are being produced yearly to replace those that burn out. That's enough mercury to contaminate nearly 20 million acres of water.

And mercury contamination isn't something new; it's just the awareness that's recent. I can remember that as a child my brother and I played with the mercury (often referred to as "quicksilver") from broken thermometers. Those old thermometers contained 500 mg of mercury! I have no idea where that mercury eventually ended up.

The dangers of mercury contamination are well-known and documented. Mercury is the second most toxic naturally occurring substance on earth. (Plutonium is said to be the most toxic.) Mercury is recognized as one of the most hazardous substances in our food and water, and has been linked to everything from mental impairment in our children to heart disease in adults, and is a possible contributor to the growing epidemic of Alzheimer's. *(Neuroreport 01;12(4):733–737)*

Safety First

I'm not convinced that it can be enforced, but a few states (California, Wisconsin, Ohio, Minnesota, Illinois, Indiana, and Michigan) have passed laws making it illegal to throw fluorescent bulbs in the trash. I doubt that most people in these states even know about the law.

There are also companies that specialize in recycling these bulbs, for a charge of anywhere from $2 to $4 per bulb (for information see *www.lightbulbrecycling.com* or call 303-449-1876).

In This Issue

You will observe with concern how long a useful truth may be known, and exist, before it is generally received and practiced on. — Benjamin Franklin

Through recycling, over 99 percent of the mercury can be reclaimed and kept out of the environment. That's not the case, however, when a bulb gets broken. (I keep thinking of my childhood and how many of those expended fluorescent light bulbs we "popped"…what fun.) When a fluorescent bulb breaks in your home, enough mercury vapor is released that the place should be considered a hazardous waste site, to be decontaminated by experts. Obviously, that never happens. In fact, most people aren't even aware that breathing the released vapors or coming into contact with the broken bulb are dangerous. The EPA is. Not only did the EPA provide a special exemption to even sell mercury-containing fluorescent lamps to the public, they also have very specific guidelines for cleaning up a broken bulb. Until I researched the subject, I had no idea of just dangerous a broken bulb could be. I doubt many people do.

EPA Guidelines for CFL Cleanup

- Open a window if there is one, and leave the room for at least 15 minutes (and restrict access to others).
- Remove all you can without using a vacuum:
  - — Wearing disposable rubber gloves, scoop up everything you can, including the powder, using stiff paper or cardboard.
  - — Use sticky tape such as duct tape to pick up the remaining small pieces and powder.
  - — Wipe the area clean with a damp paper towel or disposable wet wipe.
  - — Place all cleanup materials into a plastic bag and seal it. If your area allows it, dispose of the bag in an outdoor trash receptacle. (They don't give any suggestions for final disposal if your local government *doesn't* allow you to put CFLs in the trash.)
- Vacuum the area where the bulb was broken, then remove the collector bag or wipe out the canister. Put the debris in a plastic bag, seal it, then put it in a second bag. Dispose as above.

Given the EPA's inconsistent track record, at this point it's hard to tell whether they're being alarmist or conservative. Regardless, a broken bulb is something you need to take seriously.

The Temperature Is Rising

All of the recycling efforts are highly commendable, but I still think we're going to see a very significant increase in mercury pollution for several years to come. And along with that we're going to see increases in childhood mental deficiencies and cases of Alzheimer's and other "unexplained" neurological diseases.

Don't get me wrong—I think widespread use of fluorescent bulbs has a place in solving many of our current problems. Full-spectrum bulbs are a good choice, and even better are LED bulbs—which don't contain toxic material, but haven't become inexpensive enough yet for widespread use. I have no problem with the use of fluorescent bulbs. I do, however, have a problem with their potential for contamination. The public is being told that the bulbs are an integral part of reducing our energy consumption and a way to help prevent global warming. What they're not being told about are the dangers involved and how to deal with them. I worry this is going to be another situation where 10 or 15 years down the road someone finally realizes that tens of thousands of men, women, and children have suffered or died needlessly from increased mercury exposure.

Mercury contamination is so severe in our waterways nowadays that many are thought to be contaminated forever. Sadly, most of the unwitting public will also be contaminated permanently. It's not an exaggeration to say that every individual in this country probably has detectable levels of mercury in their system.

Checking the Thermomometer

There are ways to check mercury levels in your body, but none are foolproof—and there's a considerable amount of controversy over which methods work the best. The most well-known test for mercury toxicity is hair analysis. Many doctors are of the opinion that hair analysis isn't reliable, but that's not the case. It can be a great tool if you know how to use it. *Individuals who are mercury toxic will, in most cases, have normal readings for mercury not only in hair tests but also in blood and urine tests*. To determine if mercury toxicity exists, one has to look for the bio-

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HEALTH HINTS FROM READERS

Butyric Acid for Digestion

Question: I've had difficulty digesting various foods for years. Eating the wrong food either triggers severe diarrhea, colon problems, or skin rashes.

I've tried food elimination diets, rotation diets and probiotics but nothing has given me any long-term relief.

Being a long-time subscriber to *Alternatives*, I always look to what you've written in the past if I have a health problem. I noticed that on several occasions you wrote about butyric acid and it was beneficial in eliminating Crohn's disease and IBS (irritable bowel disease). I continued taking my probiotic and other vitamins and recently added butyric acid with each meal. The results have been amazing.

I can eat practically any food without experiencing any problems whatsoever. I'm no longer punished with diarrhea or the other complaints.

I started taking two tablets with each meal, but I've cut back to one tablet and everything seems to be fine. I'll eventually taper off further but not yet.

I thought other readers would like to know. Keep up the good work.

— Tom C.,
Via e-mail

Answer: Butyric acid, or butyrate, can have an amazing effect on the bacteria of the colon which is the seat of many food allergy problems.

Butyric acid is a short-chain fatty acid. It's naturally created by friendly bacteria in the colon from undigested fiber. Butyric acid stimulates more beneficial bacterial growth, improves one's ability to absorb minerals, enhances fat digestion, and helps prevent inflammation. For some people it seems difficult to either produce enough butyric acid or utilize the amount present in the colon. In these cases supplementation can work wonders to get everything back on track.

Kombucha tea contains higher levels of butyric acid, and I suspect that's why many people report experiencing similar benefits after using the fermented product.

Allergy Research Group sells butyric acid as ButyrAid under their Nutricology label. If you can't find it or another butyric acid product in your local health food store, it can be ordered from the Vitamin Shoppe at *www.vitaminshoppe.com* or 866-293-3367, and from other mail order suppliers.

chemical aberrations that mercury causes—not just for the mercury itself. This is far too complicated to explain here, but there's one book all doctors should have in their offices that explains in detail how to interpret these tests. The best reference guide available is the book *Hair Test Interpretation: Finding Hidden Toxicities* by Andrew Cutler. Cutler also recommends specific lab tests like the "Hair Elements" test from Doctor's Data in Chicago at *www.doctorsdata.com* or 800-323-2784; or Direct Lab Services at *www.directlabs.com* or 800-908-0000.

It's imperative that you do all you can to reduce your direct exposure to mercury. Just as important, you'll want to implement a diet and supplement plan that will continuously help remove mercury from your body.

Nature provides various substances that help remove mercury and other heavy metals. Mercury has a strong affinity for sulfur. As such, there's a long list of vegetables and fruits with high sulfur contents that can help remove mercury from the body. These foods do have their limitations, however. With continued exposure, your body's natural defenses can easily be overwhelmed.

For most of us, mercury will enter our body either through our intestinal tract (water, food, or amalgam tooth fillings) or through our respiratory tract (vapor from pollution or a broken fluorescent bulb). With our food and water supplies so widely contaminated, it will be difficult to avoid mercury completely. This is where a diet high in sulfur-rich vegetables, fruits, and other foods can help. These foods can bind with the mercury while it's still transiting the intestinal tract and carry it out of your body.

On the next page you'll find a partial list of high-sulfur foods. I think I've discussed each of these at one time or another through the years. Unfortunately, they don't receive the attention or research they deserve—and probably never will. Most have strong antioxidant capability and are rich in various bioflavonoids. We now know they also have the added benefit of being able to lock on to mercury and prevent its absorption into the body.

Based on the widespread contamination levels we're seeing today, I would highly recommend adding several of these items to your diet every day. It wasn't that long ago that I reported the discovery that cilantro was an

Inositol for Depression

Question: I was recently diagnosed by my doctor as having bipolar depression. In a way it was a relief to discover I had a real problem and it was treatable, but I don't relish the idea of having to take anti-depressant medication for the rest of my life. My doctor wants me to take Prozac. I'm pretty sure I know your opinion on the subject, but I do need some help and would hope you might suggest some alternatives. Can you?

—L. C.
Norman, OK

Answer: Prozac, Celexa, Zoloft, Luvox, Effexor, and Paxil all belong to a relatively recent class of drugs called selective serotonin reuptake inhibitors (SSRIs). It's probably no surprise that the number of diagnosed cases of depression has soared since SSRIs came onto the market 15 or 20 years ago.

Pharmaceutical companies have aggressively marketed SSRIs from day one. Their marketing efforts focused on both expanding the definition of depression and spreading the belief that depression was a biochemical-based problem that could be solved chemically. To say their efforts were successful would be an understatement (their efforts to sell drugs, that is, not their efforts to relieve depression). During this period, it would appear that we have experienced a full-blown epidemic of depression and mental illness.

If you have access to the Internet, I would highly recommend reading a 2005 report of researcher Janet Currie.

It's an eye-opener, to say the least. It's one of the very best reports I've seen detailing how the pharmaceutical industry literally created a market for SSRI drugs, while at the same time covering up the fact that they are generally ineffective, costly, and fraught with dangerous side effects and addictive properties. The full report can be accessed at *www.whp-apsf.ca/pdf/SSRIs.pdf*. It's on the Canadian Women and Health Protection Web site under "documents."

(If you don't have Internet access, give the Web address to your local librarian and ask him/her to download and print the article for you.)

A Real Solution

A natural and safe alternative to SSRI drugs is the compound inositol—considered to be a part of the vitamin B complex, but not truly a vitamin.

In the body, inositol's primary use is in the formation of cell membranes. It is also involved, however, in the systems that deliver messages from hormones and neurotransmitters to individual cells. This is how deficiencies of inositol can be related to various neurological problems like depression, eating disorders, panic disorders, obsessive-compulsive disorders, multiple sclerosis, diabetic nerve degeneration, et cetera. Although it's not totally clear exactly how, our bodies can normally

effective chelator of mercury. If the research money were available, I'm sure we'd find other vegetables that could provide similar protection.

Cruciferous vegetables such as broccoli, Brussels sprouts, cabbage, kale, chard, and watercress	Root vegetables such as carrots, radishes, turnips, garlic, and onions (but not potatoes)
Other vegetables: asparagus, avocado, parsley, red peppers, and tomatoes	Fruits: blueberries, cherries, and grapes
Nearly all grains, legumes, nuts, and seeds	Animal products: cheese, egg yolks, meat

The Next Step in Mercury Detox

One particular supplement that has been shown to remove or chelate body stores of mercury is alpha lipoic acid. This substance isn't routinely used medically (it's not FDA-approved as a chelating agent) but instead physicians resort to the prescription compounds DMPS and DMSA—both of which carry their own set of risks.

Alpha lipoic acid has the unique ability to remove mercury from inside cells and the ability to cross the blood-brain barrier. Although it may not be as strong or work as quickly as the above prescription items, there are benefits from working at a slower pace.

Once mercury is removed from tissues or brain cells, it enters the bloodstream and is carried to the liver where it's mixed with bile and dumped into the intestinal tract. Ideally, from there it should travel out of the body in the feces. However, if the natural systems are overwhelmed some of the mercury simply gets reabsorbed and redistributed throughout the body. For this reason it's imperative that, if you use alpha lipoic acid to remove mercury from your body, you maintain constant levels of the supplement in your body for periods long enough that the mercury has time to be "escorted" out of your body and not reabsorbed. That's why detoxing with alpha lipoic acid requires that doses be taken faithfully every 3 hours.

Alpha lipoic acid "dumps" smaller quantities of mercury into the system, making it easier to compensate for this extra toxic release. The reabsorption of mercury can be further minimized or avoided through a higher

make adequate amounts of inositol. It's also present in foods like unprocessed whole grains, liver, wheat germ, raisins, peanuts, cabbage, lima beans, unrefined molasses, and, of course lecithin. We do know that heavy consumption of coffee can lead to a defciency.

Numerous studies have shown that inositol can be equally as effective as the SSRI drugs in the treatment of conditions like depression, bulimia, and obsessive-compulsive disorder—without any of the side effects. Most of the studies have utilized 12 grams a day for depression and 18 grams a day for problems like panic and obsessive-compulsive disorders. Personally, I've seen excellent results in these same type cases using doses in the range of 3 to 6 grams daily. *(Am J Psychiatry 95;152(5):792–794) (Int J Eat Disord 01;29(3):345–348) (Eur Neuropsychopharmacol 97;7(2):147–155) (J Clin Psychopharmacol 01;21(3):335–339)*

Inositol is considered very safe. In a few cases, individuals experience temporary loose stools at the higher doses—and large doses may cause uterine contractions, so they probably shouldn't be taken in late pregnancy.

If you decide to try inositol, I suggest starting with 3 grams mixed with either juice or water and taken each morning. You can also just put the powder in your mouth. It doesn't matter if you take inositol with or without food. From there you can gradually increase the dose by an additional 3 grams every 4 or 5 days until either you reach 12 to 18 grams daily or you begin to experience beneficial effects. In most studies individuals began to see positive results within 4 to 6 weeks. I've found that many people actually see a difference in a matter of days, but it's worth continuing for at least a couple of months if you don't get a response that quickly.

Inositol can be purchased in capsules or in a more economical bulk powder. For example, 8 ounces of inositol sells for about $11 at *www.allstarhealth.com*. At a dose of ¼ teaspoon (600 mg) that's 378 servings.

Don't be surprised if you get some strange looks at your local health food store when you buy inositol in bulk powder. Drug dealers discovered long ago that inositol makes the perfect "cutting" agent for cocaine and methamphetamine (also called "crystal meth" or "speed"). It has no particular taste and doesn't change the drugs' appearance when they're heated. "Cutting" or diluting these drugs with inositol is an inexpensive way for dealers to increase their profits.

Sales of SSRIs are growing. This class of drugs has become a huge profit center for pharmaceutical companies over the years. More recently they've targeted their marketing efforts to promote SSRI use in young children and teenagers. The drugs have now been linked to numerous problems including increased suicides, but they are still being given to patients as young as two years old. Surprisingly, the overall outcry from parents and medical circles has been pretty weak. It seems the drug company's marketing efforts are paying off again—but now at the expense of our children.

Inositol is a safe, effective, and inexpensive. Unfortunately, the way our health care system is set up in this country those are three strikes against it.

intake of the sulfur-rich foods mentioned above. These help chelate or lock onto the mercury in the intestinal tract and move it out of the system. In addition to the high-sulfur foods, other known intestinal chelators are the blue-green algae spirulina and chlorella, aloe gel, algin, and various calcium bentonite clays. (This is just one of the many reasons I've used spirulina as the base component in the formulation of a multi-vitamin/mineral complex.)

I've seen a short mercury detox program using alpha lipoic acid work wonders for many people. The program consists of taking ⅛ to ½ mg of alpha lipoic acid per every pound of body weight, every 3 hours for 3 days and 2 nights. (The time can be stretched to every 4 hours during the night to avoid interrupting sleep as much and then returning to every 3 hours during daytime.) This would translate to 20 to 80 mg of alpha lipoic acid every 3 hours for a person who weighs 160 pounds. If one wants to repeat the program they can wait for 11 days following the initial 3 days and 2 nights before starting again.

Everyone reacts differently, so dosages often have to be adjusted depending on how one feels. It's generally better to use the lower dosages to begin with and work with a doctor familiar with this program.

To make things easier, the alpha lipoic acid can be mixed with juice or water. For example, if one was taking 25 mg doses, they could mix a 100 mg capsule in water and then drink a quarter of the liquid at a time.

Detox Help From the Sea

Another short-term detox product I really like is the algin I mentioned earlier—a non-digestible fiber from brown seaweeds like kelp. When it absorbs water it expands into a gel, providing a bulk laxative effect. It also binds to various toxins like mercury, cadmium, and even radioactive materials. It's readily available and relatively inexpensive. Nature's Sunshine makes an algin product that can be found in health food stores and through the mail. I recommend taking 2 capsules with each meal for a couple of days before beginning the program and continuing during the program and for 5 days afterward.

(Note: The suggestions and ideas I've presented here will benefit the large majority of individuals, but they

(*Mercury continued on page 15*)

NEWS TO USE FROM AROUND THE WORLD

Tea Sandwiches for Lung Health

COLERAINE, NORTHERN IRELAND—It's rare to find anything that provides a degree of protection for those who use tobacco. I certainly don't condone or encourage smoking in any fashion and personally think it's one of the worst things you can do for your health.

Having said that, new research indicates the consumption of watercress can help prevent the DNA damage preceding cancer in smokers. *(Am J Clin Nutr 07;85(2):504–510)*

Studies have shown repeatedly that smokers have lower antioxidant levels than non-smokers and increasing antioxidant supplements can decrease their risk of developing cancer (or at least delay its onset). In this particular study, smoking participants who ate 85 grams (3 ounces) of raw watercress daily increased their plasma concentration of lutein by 100 percent and of beta-carotene by 33 percent.

We've known for years that watercress could help in the prevention of cancer. After all, it is a member of the cruciferous family of vegetables, which I've strongly recommended for years to include in your diet. Cruciferous vegetables like cabbage, broccoli, kale, mustard greens, et cetera, contain various sulfur-related compounds and other components that block cancer formation.

Cruciferous vegetables contain dozens of different cancer-fighting photochemicals. Watercress is unique among the crucifers in that it contains the highest concentrations of a particular phytochemical called phenethyl isothiocyanate (PEITC). Animal studies have shown that PEITC detoxifies NNK, a well-documented carcinogen in tobacco.

Watercress isn't a cure-all, or a way to prevent all tobacco-related cancers, by any means. But almost 10 years ago researcher, Stephen Hecht found that when smokers ate 2 ounces of watercress with each meal one of the key tobacco carcinogens was neutralized within just 3 days. *(Cancer Res 98;58:4102–4106)*

This research just adds further support to the early pioneers in natural cancer treatment who felt watercress and the other cruciferous vegetables should be an integral part of cancer treatment, as well as prevention.

At this point, I'm sure drugmakers (and suppplement makers as well) are trying to isolate the active components in watercress for individual sale. It's important to remember, however, that actually eating the vegetable is probably the best form of protection. In addition to delivering various antioxidants and phytonutrients into your bloodstream, thorough chewing also neutralizes the potential carcinogens through direct contact. This is particularly true in the case of tobacco, whether it's inhaled or chewed.

More Beef Means Fewer Babies

ROCHESTER, NEW YORK—Fertility problems have been, and will continue to be, a growing problem in the industrialized world.

A recent study indicates that practically all animals entering conventional beef feedlots in both the US and Canada still receive anabolic steroids, including both natural and synthetic forms of estrogen, testosterone, and progesterone. Measurable levels of all of these are found at slaughter. The FDA has even set "acceptable daily intakes" for these drugs. This "experiment" of subjecting our population to hormone consumption on a daily basis has now been going on for 50 years.

Scientists just recently compared the sperm concentration and quality of men born to women in the high and low beef consumption groups. They found a couple of things. One, the sperm concentration (volume) was 24.3 percent higher in the sons of mothers in the "low" beef consumption group. And two, almost 18 percent of the sons born to women in the "high" beef consumption group had sperm levels below what the World Health Organization says is the threshold for subfertility. This was three times more than the sons of women who were in the "low" consumption group. *(Human Reproduction, Online March 28, 2007)*

A new over-the-counter product has recently been approved that will let males check their own sperm motility without a prescription or visit to the doctor.

The product is called Fertell. The company sells it directly or it can be purchased at CVS pharmacies. In addition to checking male fertility, it also includes a urine tester for women that measures their level of follicle stimulating hormone—a key element of female fertility. The kit that includes both tests costs $99 delivered. For information or ordering you can go to their Web site at *www.fertell.com* or call 866-735-4445.

When couples have a hard time conceiving, it's often felt that the female is the one with fertility problems. However, half the time it's the male. For less than the cost of most doctor visits, and much less than any laboratory testing, this test will quickly rule out male fertility as a factor. It also indicates whether the female is okay and the couple can keep trying to conceive on their own, or if they need to seek medical help.

Following the Ingredient Trail

I don't how useful this information is, but I found it something to ponder. In the last 10 years, China has captured 90 percent of the US market for vitamin C, putting most other suppliers out of business. Their pharmaceutical companies now make 70 percent of the world's penicillin, 50 percent of its aspirin, and 35 per-

NEWS TO USE *(CONTINUED)*

cent of its acetaminophen (also sold as Tylenol)—and most of the vitamins A, B12, and E being sold today.

There's been a great deal of concern lately over the quality of many of these ingredients—particularly over contamination with other chemicals. In one recent case, material that was supposed to be glycerin (a sweet fluid used in cough syrup and other liquid medications) was actually the cheaper diethylene glycol (DEG, a solvent used in the making of dyes, inks, glue, and brake fluid, among other things). DEG is highly poisonous.

The media have had a field day with these reports. What they haven't said is that most of what comes out of China is of perfectly fine quality—and that reputable manufacturers (including, I have to say, Mountain Home Nutritionals) test every batch of every raw ingredient for purity and identity before including it in a formulation. The finished products are tested as well, to be sure nothing went wrong during production.

The Chinese say that they're cleaning up their act in preparation for the Summer Olympics to be held in Beijing a year from now. They've begun by punishing the head of their equivalent of the FDA for taking bribes. At the same time, our FDA lets officials sitting on decision panels accept up to $50,000 in fees from the very companies they're supposed to regulate. We'll see how that works out. In the meantime, we test everything.

(Mercury continued from page 13)

aren't adequate for dealing with severe toxicity. Severe mercury toxicity can require very stringent monitoring to correct. For example, detoxifying after the removal of dental amalgam fillings would require a far more involved program. And the even the short detox programs I mention above are not recommended if you have dental amalgam fillings. You don't want to be mobilizing and pulling mercury out of your fillings. If you have serious mercury toxicity I would highly recommend working with your doctor or other specialist trained in that area.)

Mercury accumulation now occurs throughout our lives. I think a simple mercury detox once every year or so could make a significant impact on one's overall health and longevity.

Heavy metals like mercury have a half-life of 15 to 20 years in the human body, meaning it takes that long for just half the mercury to be eliminated without any help. This helps explain why symptoms like fatigue, brain fog, memory loss, nerve pain, et cetera, are often the first symptoms of chronic toxicity. It may also explain many of the neurological "epidemics" we're starting to see in our older populations. I fully expect the problems to get far worse before they get better. There's no reason, however, that you should be one of the victims.

Bacteria for Prostate Health

As men get older, they naturally become more concerned about the health of their prostate gland. The interest isn't surprising at all; more than half of men over age 50—and 80 percent of those over age 80—have what's known as benign prostatic hyperplasia, or BPH. In hyperplasia—overgrowth of normal cells—the prostate enlarges and begins to pinch off the urethra and reduce the flow of urine. The result is a collection of urinary symptoms, including incomplete voiding, dribbling after urinating, and nocturia, or the night-time urge to go to the bathroom.

Fortunately, as the name states, BPH is relatively benign. That is, the symptoms might be bothersome (just ask any man who's dealing with it), but the condition isn't deadly, or even debilitating. I've written before about various strategies for dealing with BPH, including exercise, massage, and use of the herb saw palmetto. [*Editor's note: For further details about the treatment of BPH, see the subscriber center of the* Alternatives *Web site,* www.drdavidwilliams.com.]

There's another prostate concern that men should be thinking of, however, and that's cancer. Awareness of prostate cancer is certainly nothing new. Years of public service announcements have urged men to have their level of PSA (prostate specific antigen) tested at their next checkup. (As I reported in the July 2005 issue of *Alternatives*, however, it turns out that a man's PSA level is more an indicator of prostate size—that is, BPH—rather than of cancer. A better measure is how fast the PSA level is changing.) And if you're getting an annual checkup, your physician should certainly be asking questions that will indicate your risk for prostate cancer. What many men aren't aware of is that there's a connection between their prostate and their digestive tract.

The Hormone Connection

Many cancers of the reproductive system—the prostate, but also breasts (even in men), uterus, et cetera—are sensitive to the body's levels of various hormones. Many pharmaceutical therapies target these hormones, in an attempt to either reduce their levels or disrupt their actions through various mechanisms. For example, the drug Lupron, used to treat prostate cancer, suppresses the release of both testosterone and the estrogens, while

tamoxifen, for breast cancer, blocks estrogen receptors without affecting the hormones circulating in the body.

Alternative therapies use different mechanisms in an attempt to prevent the appearance of cancer, or to treat it if it has appeared. Most of these therapies involve either foods or food extracts, and take advantage of the presence of what are known as phytoestrogens. (By the way, phytoestrogens aren't true estrogens. They do have chemical structures similar to the compounds found in mammals, which enables them to attach at the site of estrogen receptors. But the rest of the molecule is a different shape, so phytoestrogens don't have the same biological effects estrogens do.)

There are two main groups of phytoestrogens, isoflavones and lignans. You're probably already familiar with isoflavones—such as genistein and daidzein that are found in soy. There's a considerable amount of research showing that consumption of fermented soy products such as tofu and tempeh can have a positive effect on hormone levels and reduce your risk of several types of cancer. [*Editor's note: See* Alternatives*, Vol. 5, No. 22 for more about the benefits of soy.*]

The lignans are less well-known. They're found mostly in grains and other sources of fiber. Plant lignans don't exert their effects directly; instead, they're converted into human lignans in the gut, through the action of bacteria. The human lignans, enterodiol and enterolactone, have weak estrogenic activity. It's believed that enterolactone affects prostate health by competing directly with the true estrogen called estradiol. It may also play a role in cell signaling.

Some of the most interesting work on lignans has taken place in Scandinavia. Researchers at the University of Turku in Finland have been investigating the lignan matairesinol, found in sesame seeds, the bran of many grains, and the Norway spruce. They have discovered that a variant of matairesinol, known as HMRlignan, is converted directly to enterolactone. Other lignans require a two-step process that can take up to 20 hours. Researchers at the Karolinska Institutet in Stockholm, Sweden, found a direct link between levels of enterolactone and the risk for prostate cancer. (*Cancer Causes Control 06;17(2):169–180*)

Our ancestors ate whole grains, including the bran. Given that bran seems to have disappeared from the diet of many individuals, some alternative source of matairesinol seems like a good idea. It's not likely that you'll be gnawing on a Norway spruce any time soon, but HMRlignan is available in supplement form. The Finnish researchers found that 10–30 mg daily was enough to elevate blood levels of enterolactone.

As I said earlier, the conversion of plant lignans to a form your body can use depends on healthy bacterial flora. If you're not already doing so, you might want to consider eating a cup of yogurt with live cultures, a couple tablespoons of real sauerkraut, or other fermented food daily.

It's unclear at this point exactly which bacteria are involved in the conversion. But in human trials that looked at the conversion of plant compounds into human ones, there was tremendous variability from person to person in the rate and extent of conversion. And in the Swedish study cited earlier, the researchers didn't find a connection between the intake of lignans and the risk of prostate cancer. It's a good bet that the differences had to do with the state of each individual's intestinal flora—the better shape their gut was in, the better results they saw.

Our intestines seem like a dark and mysterious place. We're continually finding evidence of processes going on in there that were unthought of just a few years earlier. That's why it's a good idea to keep them in the best shape possible—you just never can tell which hidden function will be the one that's critical to your individual health. If you've been reading *Alternatives* for a while, you know that I've been touting the benefits of fermented foods for many years. Something as simple as sauerkraut could be the key to a healthy prostate.

Take care,

If you have questions or comments for Dr. Williams, please send them to the mail or e-mail addresses listed to the right. Of course, practical and ethical constraints prevent him from answering personal medical questions by mail or e-mail, but he'll answer as many as he can in the Mailbox section of *Alternatives*. For our part, we'll do our best to direct you to his issues, reports, and products related to the subject of your interest.

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